STATEMENT OF REAR ADMIRAL WAYNE E. CALDWELL, USCG, CHIEF, OFFICE OF MARINE ENVIRONMENT AND SYSTEMS, BEFORE THE HOUSE OF REPRESENTATIVES' COMMITTEE ON MERCHANT MARINE & FISHERIES, SUBCOMMITTEE ON COAST GUARD & NAVIGATION, AND SUBCOMMITTEE ON OCEANOGRAPHY, JULY 18, 1979

Good afternoon. I am Rear Admiral Wayne E. CALDWELL, Chief, Office of Marine Environment and Systems, U.S. Coast Guard.

It is my pleasure to be here today to discuss marine transportation of liquefied gases and related shoreside facilities designed to handle these materials.

The administration shares your concern about these vital issues -- as demonstrated by the Department of Transportation's own legislative proposal, introduced in the House as H.R. 2207, and as demonstrated by the continuing regulatory efforts of both the Coast Guard and the Materials Transportation Bureau, the operating elements of the Department most directly concerned.

In reviewing the Committee's letter of invitation to this hearing, I see two general concerns which we share with the Committee. First, we share the Committee's concern that the American Public must be protected from all hazardous materials. For too long, discussions in the liquefied gases area in particular have been preoccupied with overdrawn

scenarios concerning LNG when, in fact, we have been safely transporting cargoes of equal or greater hazard by water for a number of years. Among these other materials are liquefied petroleum gas (LPG), anhydrous ammonia, chlorine, butadiene, vinyl chloride and propylene.

Second, we agree with you that a national approach to these safety issues is desirable, particularly as to LNG.

My presentation today will touch on these issues, Mr. Chairman, and will do so primarily by describing for the Committee the many actions that the Coast Guard and the MTB have taken in the area of LNG and hazardous material safety. These actions are important in a legislative context; it is because we have made significant progress in this area, from a regulatory and administrative perspective, that the Administration's only legislative initiative in the LNG area is H.R. 2207, DOT's own proposal to amend the Natural Gas Pipeline Safety Act.

There can be no denial of the fact that many of the liquefied gases have significant potential hazards. I hope all who are in any way associated with the design, construction and operation of liquefied gas vessels and facilities never underestimate the potential hazards these materials present to persons, property and the marine environment. However, vessel and facility design and operational requirements can be introduced to substantially mitigate these hazards. In fact, this has already taken place. Coast Guard marine safety units reported the

following numbers of liquefied gas marine transfers for calendar year 1978:

(a) 75 marine transfer operations in which over 2,900,000 tons of LNG were loaded on or offloaded from vessels.

(b) 2,225 marine transfer operations in which over 25,900,000 tons of LPG were loaded on or offloaded from vessels.

(c) 5,632 marine transfers of anhydrous ammonia, chlorine, butadiene, propylene, propylene oxide, vinyl chloride and ethylene in which over 8,860,000 tons of product were loaded on or offloaded from vessels.

In summary, there were over 7,900 cargo transfer operations involving over 37,600,000 tons of liquefied gases during calendar year 1978.

There were no serious casualties involving the transfer of these materials or the movement of the vessels involved. Thus, with appropriate precautions, liquefied gases can be carried safely in the marine mode and transferred to and from waterfront facilities.

I might add that we anticipate continued demand for LNG and LPG and continued reliance upon other liquefied gases for industrial processes and agricultural purposes. This in turn means continued demand for marine transportation of these materials, as the transportation of these materials by water is generally less expensive

per ton mile because of the large quantities that can be transported in a single shipment. Also, the safety record of marine transportation -- particularly when compared with other modes of transportation -- is excellent. Considering the demonstrated safety record and the industrial and agricultural demand for liquefied gases, the demand for transportation of these materials by the marine mode will continue to increase. Due to these anticipated increases, new waterfront facilities probably will be required.

For almost a decade, large quantities of LNG have been exported from Nikiski, Alaska -- without casualties -- despite the existence of eight-knot currents, ice floes, environmental hazards, and the potential of conflict with other ships in the vicinity. Since 1972, the Coast Guard has been supervising the importation of LNG through Boston Harbor to the Distrigas Facility in Everett, Massachusetts. New facilities for the importation of LNG began operations in 1978 at Cove Point, Maryland on the Chesapeake Bay and on Elba Island in the Savannah River near Savannah, Georgia. Other LNG facilities are being planned for the Gulf and Pacific Coasts.

As new markets, private and commercial, are identified for LNG, LPG and other liquefied gases, new waterfront facilities are likely to be planned to meet the demand for these materials. These facilities serve or will be designed to serve a significant hinterland, often hundreds of miles from the port area. The benefits to be derived from these facilities, for the foreseeable future, extend to significant

numbers of citizens in the hinterland, far in excess of those in the immediate area of the facility.

With respect to the movement of vessels, it is Coast Guard policy that specific direction and control should be exercised by local Coast Guard officials acting in accordance with general guidelines issued by the Commandant. It is our belief that local Coast Guard officials, having detailed knowledge of local port and waterway configurations, hazards, vessel traffic characteristics, cargo patterns, marine practices and customs, and environmental and economic matters, are in the best position to determine what specific vessel traffic management actions are appropriate.

Coast Guard District Commanders and Captains of the Port regulate liquefied gas vessel movements and other traffic under the authority of the Ports and Waterways Safety Act (33 USC 1221 et seq.). Under 33 CFR Part 160, these local Coast Guard officials have been delegated authority to direct vessel movements to prevent damage and to control vessel traffic in areas determined to be especially hazardous, or under conditions of reduced visibility, adverse weather, vessel congestion, or other hazardous circumstances.

Using this authority, Coast Guard District Commanders and Captains of the Port have issued and are continuing to issue orders and directions regulating the movement of vessels carrying LNG, LPG and other hazardous materials. When these orders and directions are

issued on a continuing basis, they are issued only after there has been consultation with state and local governments and the representatives of marine industry, port and harbor authorities, environmental groups and other interested or affected parties.

Among the possible actions which local Coast Guard officials might take is the establishment of water or waterfront safety or security zones around or near the vessel or facility. This authority has been delegated to Coast Guard District Commanders and Captains of the Port under 33 CFR parts 165 and 127.

Other steps which these Coast Guard officials may take to enhance the safety of liquefied gas vessel movements could include requiring the vessel to be escorted; specifying tug assistance; restricting transits to periods of good visibility; and restricting other traffic during the movement of liquefied gas vessels.

In addition to regulating the vessel traffic associated with the movement of liquefied gases, the Coast Guard regulates the liquefied gas vessels themselves. Acting under its Port and Tanker Safety Act authority (46 USC 391a), the Coast Guard has established regulations governing the design, construction, inspection and operation of liquefied gas carriers. These regulations, which apply to both U.S. and foreign registered vessels, are contained in 46 CFR parts 38, 154 and 154a.

The Coast Guard also has worked with the Inter-governmental Maritime Consultative Organization (IMCO) in the development of uniform worldwide standards for the safe carriage of liquefied gases. These efforts resulted in publication of standards entitled "Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk." In general, these standards are equivalent to those contained in U.S. regulations except for four special requirements.

Foreign flag gas vessels possessing evidence of compliance with the IMCO Gas Code and additional U.S. requirements are considered to comply with the design and construction requirements in U.S. regulations. All U.S. flag vessels and those foreign flag vessels not possessing this evidence undergo technical plan review by the Coast Guard to insure compliance with all applicable requirements.

Prior to the Coast Guard authorizing the carriage of liquefied gases, and at specified intervals thereafter, each gas vessel is subjected to physical examinations by Coast Guard marine safety personnel. This examination includes the vessel's arrangement and cargo system, including tanks, piping, machinery, instrumentation and alarm systems. In addition, Coast Guard personnel observe the vessel's material condition, firefighting capabilities and performance of shipboard personnel. In the latter area, for LNG vessels, standards have been developed to assess the qualifications of officers and crew members of LNG vessels. These standards require that all

personnel possess an adequate level of education and training in the hazards of LNG and in the operation of vessel cargo and safety systems.

Vessels possessing authorization to transport liquefied gases are subjected to routine safety boardings prior to each entry into a U.S. port. These safety boardings are conducted to insure that each vessel is continually maintained and operated at the level to which it was initially approved.

The Coast Guard has assured and will continue to assure the safest possible operation of vessels carrying liquefied gases in U.S. waters. As previously stated, there have been several hundred shipments of LNG from Nikiski, Alaska to Japan and several from Lake Charles, Louisiana to Great Britain; there have been many LNG deliveries from overseas to Boston, New York, Cove Point and Elba Island. Also, as mentioned earlier, there were thousands of transfer operations involving millions of tons of liquefied gases in 1978 in U.S. coastal ports and along the Mississippi and Ohio River systems. All were carried out successfully.

For safety and environmental protection, the Coast Guard not only regulates liquefied gas vessels and their operations but, in cooperation with the MTB, also plays a role in assuring the safety of liquefied gas waterfront facilities. Waterfront facilities handling hazardous materials currently are regulated for safety and security by the Coast

Guard under 33 CFR 126. Coast Guard advance notices of proposed rulemaking updating these regulations were published in the Federal Register in April and August 1978; these included proposals pertaining to the operation of waterfront liquefied gas facilities. These proposed regulations would apply to the loading, unloading and movement of liquefied gases. They require specific maintenance, repairs, tests and records. Fire protection, safety equipment and security requirements also have been proposed. Facility personnel would be required to be sufficiently trained. The proposals set forth detailed operations requirements, including an operations manual, emergency manual, designation of persons in charge and other factors similar to those provided in the Coast Guard's present oil pollution prevention regulations. A comprehensive waterfront facilities notice of proposed rulemaking is scheduled to be published this September and a final rule on this subject is scheduled for issuance in July 1980.

Within DOT, primary responsibility for establishing standards for the siting of LNG facilities rests with the Materials Transportation Bureau (MTB) under the authority of the Natural Gas Pipeline Safety Act. Since the Coast Guard will bear ultimate responsibility for the safety and environmental protection of the nation's ports and waterways, it is appropriate for the Coast Guard to be involved in the siting process when — and only when — the marine mode of transportation is to be used.

In summary, by regulating liquefied gas vessel movements, vessels, and waterfront facilities as integral parts of the Coast Guard's ongoing hazardous materials regulatory programs, the Coast Guard is able to require a high level of safety for liquefied gas vessels and facilities. Our regulatory efforts are intended to enable this nation to meet its energy needs while maximizing safety, protecting the environment, and facilitating marine transportation in our ports and waterways.

At this time, Mr. Chairman, I would like to describe the important activities of the Materials Transportation Bureau. Specifically, MTB has recently made significant progress in developing regulations to assure the safe construction and operation of LNG facilities.

The MTB has now completed the review of over 4,000 pages of comments submitted in response to its April, 1977 advance notice of proposed rulemaking pertaining to new Federal safety standards for LNG facilities. The advance notice proposed more stringent LNG safety standards providing for: (1) protection of persons and property near an LNG facility from thermal radiation (heat) caused by ignition of a major spill of LNG, (2) protection of persons and property near an LNG facility from dispersion and delayed ignition of a natural gas cloud arising from a major spill of LNG, and (3) reduction of the potential of a catastrophic spill of LNG resulting from natural phenomena such as earthquakes, tornadoes, and flooding.

The MTB has decided to treat the subject matter of the original advance notice in two rulemaking actions. The first, a notice of proposed rulemaking published in the February 8, 1979 Federal Register, covers the design (including site selection) and construction of new facilities and existing facilities that are replaced, relocated, or significantly altered. That notice results from the Department's efforts to regulate for the safety of LNG facilities in a manner which is not so costly as to unnecessarily rule out LNG as a national energy source, but which will provide adequate safety assurance for the public.

The second notice of proposed rulemaking will pertain to standards for the operation and maintenance of LNG facilities. This notice of proposed rulemaking, which is in the final stages of review, will address operational and transfer procedures, site security, emergency procedures, employee training requirements, and various maintenance procedures.

As this discussion makes evident, the safety jurisdiction of both the Coast Guard and the MTB extends to waterfront LNG facilities. To assure maximum efficiency and public safety regarding these facilities, the two agencies carry out their respective regulatory activities on this subject under the terms of a memorandum of understanding executed by the agencies in February, 1978. Cooperation by the agencies under this arrangement has been excellent.

As you know, Mr. Chairman, the Coast Guard and MTB address LNG problems from the standpoint of general safety regulation authority. Other agencies have different authorities. The Federal Energy Regulatory Cpmmission has licensing authority under the Natural Gas Act. The Department of Commerce is active in coastal zone land use planning decisions pursuant to the Coastal Zone Management Act. The Economic Regulatory Administration of DOE plays a role in import policy.

However, it is clear that DOT is the agency with general safety regulatory authority in this area and it is also very clear that we have recently taken many significant steps to promote LNG safety. We are addressing siting and other operational questions under our current authorities and see no need for legislation to establish new general safety regulatory authority. We have proposed, in H.R. 2207, a bill fully cleared within the Administration, that a number of improvements be made to the law on which both MTB and the Coast Guard rely for authority in regulating LNG facilities.

Before closing, I would like to make a few specific points about the legislation before the Committee. H.R. 3749 would, as a matter of arithmetic, not further the Committee's goal of simplifying the regulatory process. It would mandate the involvement of a new agency in the LNG facility approval scheme, while expressly not amending other relevant statutes which provide the authority for present actions by other agencies. Also, it would require that agency expend resources to

develop technical expertise which it presently lacks.

As to H.R. 1414 we note that it would provide the Department of Transportation with licensing authority, authority which we do not desire, since the Federal Energy Regulatory Commission is already in the licensing business and we do not question the role of that agency. However, it is recommended that U.S. jurisdiction be asserted over liquefied gas facilities outside the territorial waters of the United States and that a safety regulatory program be established concerning them.

In closing, Mr. Chairman, I emphasize once again that, with the exception of potential future offshore facilities, we in DOT are already exercising regulatory authority in the areas addressed by the bills and that these actions demonstrate our concern in this area.

Thank you again for the opportunity to testify. At this time I would be pleased to answer any questions.

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